

Engineering Competency III -Summer Camp-

GMSI-GSDM Summer Camp 2015

Report

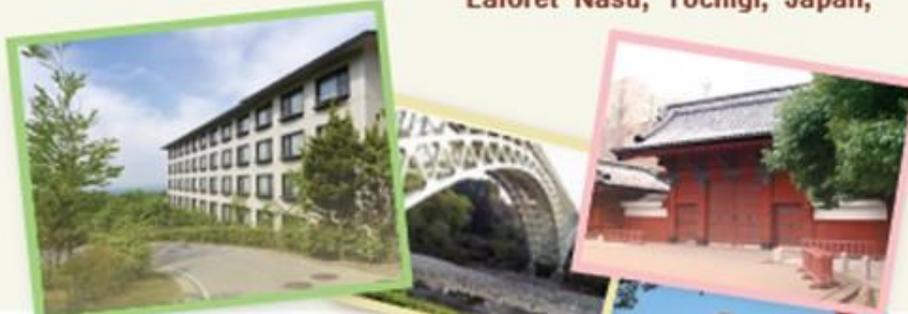
Summer camp
Organizers & facilitators
Sep.1, 2015

The University of Tokyo
Graduate Program for Mechanical Systems Innovation (GMSI)
Global Leader program for Social Design and Management (GSDM)

GMSI-GSDM

Summer Camp

Jul 31-Aug 3, 2015
The University of Tokyo &
Laforet Nasu, Tochigi, Japan,



2015 GMSI-GSDM Summer Camp



Graduate Program for Mechanical Systems Innovation (GMSI)



Global Leader program for Social Design and Management (GSDM)



Participants

63 graduate students from a variety of engineering fields representing **25** institutes in **13** countries.



Details of the participants

Massachusetts Institute Technology	Mechanical Engineering	1
University of Texas at Austin	Materials Science & Engineering	1
Northwestern University	Mechanical Engineering	1
UC Berkeley	Mechanical Engineering	2
Columbia University	Mechanical Engineering	1
Stanford University	Mechanical Engineering	1
Rice University	Electrical and Computer Engineering	1
University of Toronto	Materials Science & Engineering	1
Tshinghua Univeristy	Optical Engineering	1
	Materials Science & Engineering	1
Peking University	Inorganic Chemistry	1
Korea Advanced Institute of Science and Technology	Mechanical Engineering	1
Seoul National University	Mechanical Engineering	1
Nanyang Technological University	Physics	1
Indian Institute of Technology Delhi	Mechanical Engineering	1
Indian Institute of Technology Hyderabad	Mechanical Engineering	1
Imperial College London	Aeronautics	1
Scuola Superiore Sant'Anna	Biorobotics	1
Technical University Munich	Robotics & Embedded Systems	1
KTH Royal Institute of Technology	Mechanical Engineering	1
Aalto University	Physics	1
The University of Tokyo	Mechanical Engineering	17
	Civil Engineering	5
	Precision Engineering	4
	Aeronautics and Astronautics	3
	Bioengineering	2
	Systems Innovation	2
	Chemical System Engineering	1
	Electrical Engineering and Information Systems	1
	Information Science and Technology	1
	Materials Science and Engineering	1
Ebara Corporation	Materials Technology Department	1
Toshiba Corp.	Mechanical Systems Laboratory, Corporate R&D Center	1
East Japan Railway Company	Research & Development Center of JR East Group	1
Hitachi, Ltd. Research and Development Group	Robotics Research Department	1

Schedule

	7 am	8	9	10	11	12	1 pm	2	3	4	5	6	7	8	9
Fri. July 31			Reg.	Lectures		Lunch	UT lab tour								
Sat. Aug.1		Travel to Camp				Lunch	Opening	Self-Introduction	Technical Session	Team meeting			Dinner	Team meeting (Optional)	
Sun. Aug.2	Break fast	Team meeting				Lunch	Team meeting		Final Presentation		Photo	Award Ceremony & Banquet			
Mon. Aug. 3	Break fast					Lunch	Bus	Company lab tour		Return to UT					

Toshiba Medical Systems @Nasu

Venue: LAFORET Nasu



Cottage with Japanese traditional space



Hot spring

Day1: Lectures & UT Lab tour

Message:
Prof. Ohkubo



Introduction:
Prof. Yokono



Lectures:
Prof. Maruyama



Prof. Shiroyama



UT Lab tour

Medical devices:

Mitsubishi-Sugita Lab, Takagi Lab

Micro-nano applications:

Maruyama-Chiashi Lab, Ikuhara Lab

Engine, Satellite:

Nakasuka-Funase Lab, Kaneko-Yamasaki Lab

Day 2: Team meetings –task-

Task is to **propose an innovative product/service for the Japanese society** related to <Energy, Environment, Healthcare, Information Technology> and propose an **international research project to demonstrate the proof of concept or to accelerate the innovation process.**

Presentation template

- ✓ Survey
- ✓ Problem identification
- ✓ Proposal
- ✓ Organization
- ✓ Budget
- ✓ Potential impact

Problem identification

- Describe social and technical backgrounds. (e.g. statistical data, public statements, journal papers , etc.)
- Identify the problem.
- Discuss why the Japanese society needs to cope with the problems.

Idea of Novel Product/Service

- Propose a novel product or service
- Clarify its originality in comparison to existing products/service
- Clarify why the proposed product/service would be well accepted by the Japanese society

- 8 teams (7-8 participants/team) were organized in advance.
- Each of 4 teams had 1 researcher from industry.
- Proposal “for the Japanese society” so that shy Japanese students could be involved in the discussion.

Team meetings



Some UT students took an excellent initiative during the team meeting.

Final presentations



Evaluation & Awards

Criteria	Points
innovation, and potential impact	/ 5 points
background survey, technical soundness, feasibility, and project management	/ 5 points
Teamwork & presentation	/ 5 points

Comments given to each team

IT 1 (Health Forecast)

It was excellent that...

- Impressive presentation with nice background survey.
- “Forecast” is impressive.

Becomes better if you improve...

- ✓ Everybody answers during Q&A.
- ✓ better specify the metrics and sensors to use.



Awards for
 Best Innovation
 Best Presentation



Tour to Toshiba Medical

Lab tour and discussion



Questionnaire summary (1)

	Enjoy the camp?	Lectures	Team structure	Technical session	Team meeting	Final presentations	UT Lab tour	Company tour	Location	Meals	Accommodations	Organization
All(2015)	<u>4.6</u>	<u>3.7</u>	4.0	<u>3.9</u>	4.3	4.2	4.1	4.0	4.4	4.3	<u>4.6</u>	<u>4.5</u>
<i>All (2014)</i>	<u>4.6</u>	-	4.3	<u>3.7</u>	4.2	4.2	4.1	4.3	4.2	<u>4.6</u>	<u>4.6</u>	<u>4.6</u>
Invited from universities	<u>4.7</u>	<u>3.7</u>	4.1	<u>3.8</u>	4.2	4.2	4.2	4.0	<u>4.7</u>	4.3	<u>4.7</u>	<u>4.5</u>
Invited from companies	<u>5.0</u>	4.3	4.3	4.3	<u>4.5</u>	4.0	4.0	4.0	<u>3.8</u>	<u>4.5</u>	4.3	<u>4.8</u>
UT (non-Japanese)	4.4	4.1	<u>3.6</u>	4.2	4.3	4.2	4.4	<u>4.5</u>	<u>4.6</u>	4.4	<u>4.8</u>	<u>4.8</u>
UT (Japanese)	4.4	<u>3.3</u>	4.0	<u>3.8</u>	4.4	4.3	<u>3.9</u>	<u>3.6</u>	4.0	4.2	<u>4.5</u>	4.2

- Basically, most of the participants enjoyed the camp very much.
- Scores vary depending on the previous experience of the participants.
- Researchers invited from companies like the summer camp very much.

Questionnaire summary (2)

In which areas did you find the camp beneficial?

	Improving brainstorming /discussion skills	Obtaining valuable teamwork/leadership experience	Expanding my knowledge of other engineering fields	Developing an international network of friends/colleagues	Widening the scope of my research
N. (N=51)	31	42	25	42	18
Ratio 2015	61%	<u>82%</u>	49%	<u>82%</u>	35%
2014	71%	72%	45%	<u>83%</u>	31%

- The camp surely enhanced the “competency” of the participants.
- Researchers from companies demonstrated good leadership and task/time/team management skills.

Comments from participants

- It's **the most wonderful summer camp** I have ever participated in.
- **My overall impression was extremely positive.** It was clear that a lot of time and thought had gone into organizing the events to a good standard.
- The camp was very enjoyable, and provided a good opportunity to meet people from all over the world.
- **A seven-hour bus ride in the round trip** can be considered to be a little large waste of time even though the camp has an only three-day trip. (Many similar comments)
- Would have been good if groups were able to seek **supervision and advice from the professors** much like in an actual PhD project. (Many similar comments)
- The one suggestion I would make is **to facilitate intermingling between the international students and the UT students earlier on in the camp.** Those social experiences outside of the structured classes are just as important as the organized events.

Action plan for next summer camp

- Self-introduction on the first day. Self-introduction slides can be shared.
- Some sports or Tokyo city tours on the first day, possibly planned by students
- Lectures more related to team meeting topics
- Supervision during the team meeting
- A session for casual talks about cultural/educational differences